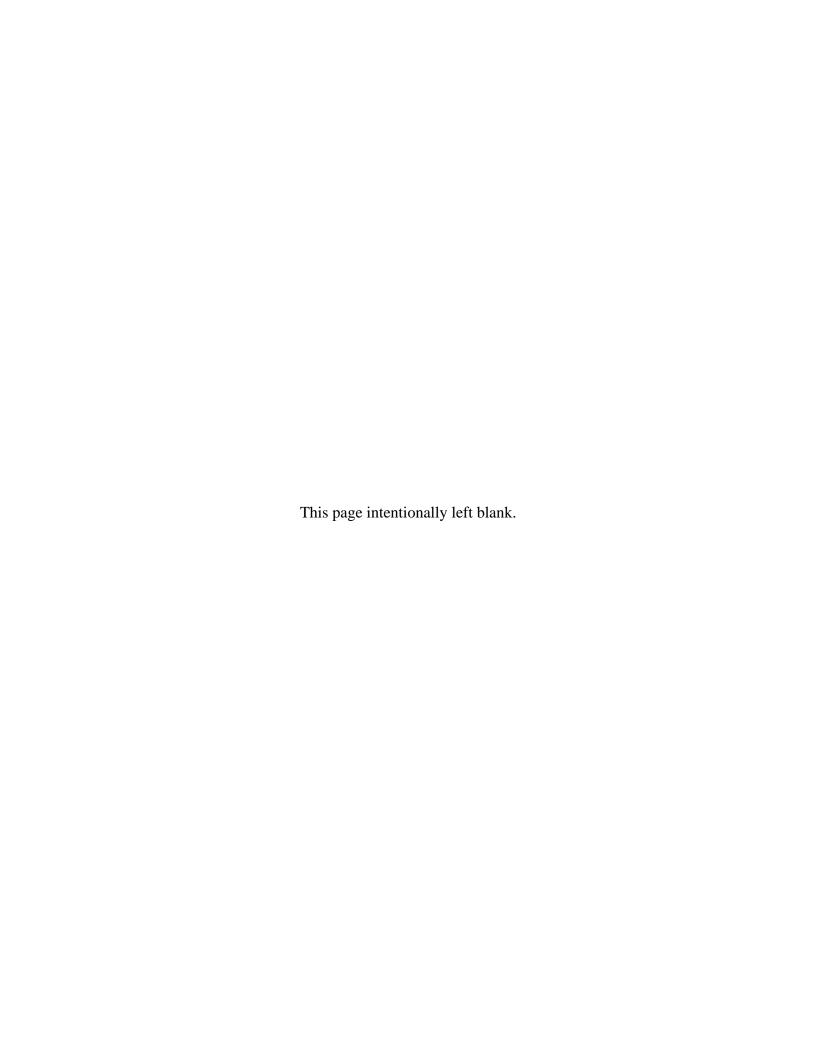**194-00285TPW**

Glossary of Terms
for the
EOSDIS Core System Project

(ECS)

June 13, 1994

Hughes Applied Information Systems
Landover, Maryland

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Preface

The purpose of this Glossary is to define terminology as used within the EOSDIS Core System (ECS) project. The Glossary was created by ECS engineers and scientists and is maintained by the ECS Data Management organization. It will be updated and reissued with documentation prepared for each major Review.

This document is not a formal government deliverable and does not require government approval prior to acceptance and use. It has been reviewed and approved by the ECS Configuration Control Board, and is under that Board's control.

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GLOSSARY of TERMS for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS) Project

acceptance testing	Verification that is conducted to determine whether a release satisfies its acceptance criteria and that provides the Government with information for determining whether the release should be accepted. Acceptance testing also applies to toolkits, science algorithm integration, and unit-level verification of COTS products.
activity	A specified amount of scheduled work that has a defined start date, takes a specific amount of time to complete, and comprises definable tasks.
advertising service	Through the advertising service, users can search and query descriptions of the data and services available in the network. This data is called advertisements. It is prepared by the data and/or service providers.
affiliated data center (ADC)	A facility not funded by NASA that processes, archives, and distributes Earth science data useful for global change research, with which a working agreement has been negotiated by the EOS program. The agreement provides for the establishment of the degree of connectivity and interoperability between EOSDIS and the ADC needed to meet the specific data access requirements involved in a manner consistent and compatible with EOSDIS services. Such data-related services to be provided to EOSDIS by the ADC can vary considerably for each specific case.

algorithm	Software delivered to the SDPS by a science investigator (principal investigator, team leader, or II) to be used as the primary tool in the generation of science products. The term includes executable code, source code, job control scripts, as well as documentation.
algorithm updates	Algorithm updates are delivered to the PGS's integration and test environment by scientists at a science computing facility. They represent changes to existing production algorithms, or a new algorithm to produce a new standard product. Algorithm updates include the source code for the candidate algorithm, its associated documentation, and a job step control skeleton. The source code will be compiled to form an executable program suite as part of the integration and test process. The job step control skeleton contains instructions that control the sequence of execution of, and the interchange of data between programs from the executable program suite. Test data sets and calibration data should also be included.
allocated baseline	The detailed technical description that allocates all segment/element functional characteristics to HWCIs and CSCIs. This baseline is initially established at PDR and refined and expanded into detailed designs at CDR. The allocated baseline for ECS releases subsequent to Release A is built upon the product baseline for the previous release.
analysis	Technical or mathematical evaluation based on calculation, interpolation, or other analytical methods. Analysis involves the processing of accumulated data obtained from other verification methods.
ancillary data	Data other than instrument data required to perform an instrument's data processing. They include orbit data, attitude data, time information, spacecraft engineering data, calibration data, data quality information, and data from other instruments.

architectural unit

A generic term for any of the following: system, segment, element, subsystem, HWCI, CSCI, CSC, or CSU.

attitude data

Data that represent spacecraft orientation and onboard pointing information. Attitude data includes:

• Attitude sensor data used to determine the pointing of the spacecraft axes, calibration and alignment data, Euler angles or quaternions, rates and biases, and associated

parameters.

• Attitude generated onboard in quaternion or Euler angle form.

• Refined and routine production data related to the accuracy or knowledge of the attitude.

authorized work

Work that has been definitized and is on contract, plus work that has been authorized but is not yet definitized.

auxiliary data

Auxiliary data can be any data set which enhances the processing or utilization of satellite remote sensing instrument data. The auxiliary data is not captured by the same data collection process as the instrument data. Auxiliary data sets can include data collected by any platform or process, preferably in georeferenced digital format (CEOS).

availability

A measure of the degree to which an item is in an operable and committable state at the start of a "mission" (a requirement to perform its function) when the "mission" is called for an unknown (random) time. (Mathematically, operational availability is defined as the mean time between failures divided by the sum of the mean time between failures and the mean down time [before restoration of function].

availability
(inherent) (A_i)

The probability that, when under stated conditions in an ideal support environment without consideration for preventive action, a system will operate satisfactorily at any time. The "ideal support environment" referred to, exists when the stipulated tools, parts, skilled work force manuals, support equipment and other support items required are available. Inherent availability excludes whatever ready time, preventive maintenance downtime, supply downtime and administrative downtime may require. A_i can be expressed by the following formula:

$$A_i = MTBF/(MTBF + MTTR)$$

Where: MTBF = Mean Time Between Failures

MTTR = Mean Time To Repair

availability
(operational) (A_O)

The probability that a system or equipment, when used under stated conditions in an actual operational environment, will operate satisfactorily when called upon. A_O can be expressed by the following formula:

$$A_O = MTBM / (MTBM + MDT + ST)$$

Where: MTBM = Mean Time Between Maintenance
(either corrective or preventive)

MDT = Mean Maintenance Down Time where corrective, preventive administrative and logistics actions are all considered.

ST = Standby Time (or switch over time)

averaging

Standard data averaging involves extraction from a data granule of aggregate pixels formed by numerically averaging the N adjacent pixels in each of one or more dimensions of the granule. The number of pixels in each dimension to be averaged is characterized by the value of "N."

baseline	Identification and control of the configuration of software (i.e. selected software work products and their descriptions) at given points in time.
baseline, *configuration management specific*	A configuration identification document or a set of such documents formally designated by the Government at a specific time during a configuration item's life cycle. Baselines, plus approved changes from those baselines, constitute the current approved configuration identification.
baseline activity profile	A schedule of activities for a target week corresponding to normal instrument operations constructed by integrating long term plans (i.e., LTSP, LTIP, and long term spacecraft operations plan).
baseline change control	The system used to establish, analyze, communicate, and record approved changes to the project baseline.
bibliographic reference papers	A record of the use of data products, documentation on the generating algorithms, and other reference material.
browse data product	Subsets of a larger data set, other than the directory and guide, generated for the purpose of allowing rapid interrogation (i.e., browse) of the larger data set by a potential user. For example, the browse product for an image data set with multiple spectral bands and moderate spatial resolution might be an image in two spectral channels, at a degraded spatial resolution. The form of browse data is generally unique for each type of data set and depends on the nature of the data and the criteria used for data selection within the relevant scientific disciplines.
budget change request	The document used to record changes to work breakdown structure elements that affect the scope of work, budget, and/or schedule at that specified level.

build   An assemblage of threads to produce a gradual buildup of system capabilities.

    build, *configuration management specific*   An assemblage of threads to produce a gradual buildup of system capabilities. Builds are combined with other builds and threads to produce higher level guilds.

calibration   The collection of data required to perform calibration of the instrument science data, instrument engineering data, and the spacecraft engineering data. It includes pre-flight calibration measurements, in-flight calibrator measurements, calibration equation coefficients derived from calibration software routines, and ground truth data that are to be used in the data calibration processing routine.

campaign   A coordinated, relatively short-term data collection effort which is conducted as a subset of time or region of an experiment's or project's data collection activity. E.g., one summer's worth of data for a time series that covers sequential summers for comparison.

Capabilities and Requirements Review (CRR)   Assessment of EOSDIS annual Project-level capabilities and requirements. CRR is conducted to determine if ECS is meeting its objectives and provides evolutionary direction for new or modified requirements. Current information is provided on how ECS supports the EOS mission.

catalog interoperability	Refers to the capability of the user interface software of one data set directory or catalog to interact with the user interface at another data set directory or catalog. Three levels of catalog interoperability are recognized: • Level 1 Interoperability – simple network interconnectivity among systems. • Level 2 Interoperability – catalog systems can exchange limited search and user information. • Level 3 Interoperability – catalog systems exchange standard search protocols. This provides "virtual" similarity between different systems.
catalog system	An implementation of a directory, plus a guide and/or inventories, integrated with user support mechanisms that provide data access and answers to inquiries. Capabilities may include browsing, data searches, and placing and taking orders. The system is a specific implementation of a catalog service.
class I change	Changes that impact ECS Project-level milestones, budget, costs, and requirements. Class I changes may not be implemented until approved by the Earth Science Data and Information System (ESDIS) change control board.
class II change	Engineering changes which are not defined as Class I changes (e.g. changes in documentation to correct errors or add clarifying notes).
client	Entity that wishes to invoke an operations on a target object via the object request broker.
command	Instruction for action to be carried out by a space-based instrument or spacecraft.
collocated	Physically located in the same institution.

command and data handling (C&DH)	The spacecraft command and data handling subsystem which conveys commands to the spacecraft and research instruments, collects and formats spacecraft and instrument data, generates time and frequency references for subsystems and instruments, and collects and distributes ancillary data.
command group	A logical set of one or more commands which are not stored onboard the spacecraft and instruments for delayed execution, but are executed immediately upon reaching their destination on board. For the U.S. spacecraft, from the perspective of the EOS Operations Center (EOC), a preplanned command group is preprocessed by, and stored at, the EOC in preparation for later uplink. A real-time command group is unplanned in the sense that it is not preprocessed and stored by the EOC.
commercial off-the-shelf (COTS)	COTS is a product, such as an item, material, software, component, subsystem, or system, sold or traded to the general public in the course of normal business operations at prices based on established catalog or market prices.
component	the next lower functional subdivision below "subsystem" in the ECS functional hierarchy.
comprehensive and incremental scheduling	Two modes of scheduling. Comprehensive scheduling is the automatic scheduling of a full set of events. Incremental scheduling is interactive scheduling of selected events. For example, the initial generation of a schedule might use comprehensive scheduling, while the addition of a single event with the desire to avoid perturbing previously scheduled events might use incremental scheduling.
computer program library (CPL)	A library designated to establish and maintain software in media form. The computer program library handles, stores, and manages master magnetic media and related data.

computer software component (CSC)	A distinct part of a computer software configuration item. CSCs may be further decomposed into other CSCs and computer software units.
computer software configuration item (CSCI)	A configuration item comprised of computer software components and computer software units.
computer software unit (CSU)	An element specified in the design of a CSC that is separately testable. A package of work allocated to an individual member of the software development team (CSUs do not span personnel boundaries).
configuration	The functional and physical characteristics of hardware, firmware, software or a combination thereof as set forth in technical document and achieved in a product.
configuration change control	Configuration change control is the systematic coordination, evaluation, and release of approved changes to an established baseline.
configuration change request (CCR)	A document that requests and justifies a change to a configuration item.
configuration control	The systematic proposal, justification, evaluation, coordination, approval or disapproval of proposed changes, and the implementation of all approved changes in the configuration of a configuration item after formal establishment of its baseline.
configuration item (CI)	An aggregation of hardware, firmware, software or any of its discrete portions, which satisfies an end use function and is designated for configuration management.

configuration item, *configuration management specific*	An aggregation of hardware, firmware, software or any of its discrete portions, which satisfies an end use function and is designated for configuration control. CIs are those items whose performance parameters and physical characteristics must be separately defined (specified) and controlled to provide management insight needed to achieve the overall end use function and performance.
consent to ship review (CSR)	Review to determine the readiness of a release for transition to sites for integration testing.
contractor-acquired property	Property acquired or otherwise provided by the contractor for performing a contract and to which the Government has title.
contractual milestones	Specific delivery or event dates specified in the contract. These dates may not be changed in the schedules without Government approval through a contract change.
control milestones	Any event that the project manager and/or the Government considers critical. Control milestones include contract and project office specified milestones. They cannot be revised or slipped without approval by the project manager and, if applicable by the Government.
correlative data	Scientific data from other sources used in the interpretation or validation of instrument data products, e.g., ground truth data and/or data products of other instruments. These data are not utilized for processing instrument data.
cost account	A management control level at which actual costs are normally collected and compared to earned value. A cost account is a natural control point for cost/schedule planning and control because it represents the work assigned to one responsible organizational element for one element of the work breakdown structure.

Cost Account Manager (CAM)	Usually a member of first-level project management who is responsible for a unit or segment of work and has the appropriate authority level for planning, performing and controlling that work.
Critical Design Review (CDR)	A detailed review of the element/segment-level design, including such details as program design language for key software modules, and element interfaces associated with a release.
critical path	A path on a network which has the greatest negative slack and is the longest path in time through the network.
DAAC	see Distributed Active Archive Center
data acquisition request (DAR)	A request for future data acquisition by an instrument(s) that the user constructs and submits through the IMS.
Data Archive And Distribution System (DADS)	Included in each DAAC and responsible for archiving and distribution of EOS data and information.
data availability schedule	Data availability schedule is a schedule indicating the times at which specific data sets will be available from remote DADS, EDOS, the international partners, the ADCs, and other data centers for ingestion by the collocated DADS. The schedules are received directly by the PGS.
data center	A facility storing, maintaining, and making available data sets for expected use in ongoing and/or future activities. Data centers provide selection and replication of data and needed documentation and, often, the generation of user tailored data products.

data dictionary contexts	A method for organizing information in the data dictionary from a user perspective. For example, Atmospheric Dynamics could be defined as a data dictionary context. Search and access requests to the data dictionary can reference a context and thus restrict the visibility of data dictionary information to that context.
data dictionary domains	A method for organizing data dictionary information from a provider perspective. The domain of a data dictionary could be a distributed information manager, a specific site (i.e., a local information manager), or a Data Server.
data dictionary views	A method for preselecting a subset of the data dictionary information for the purpose of access. For example, a view might select only the attributes which correspond to product directory information.
data products	see "special data product" and "standard data product"
data product levels	• Raw data--Data in their original packets, as received from the observer, unprocessed by EDOS. • Level 0--Raw instrument data at original resolution, time ordered, with duplicate packets removed. • Level 1A--Reconstructed unprocessed instrument data at full resolution, time referenced, and annotated with ancillary information, including radiometric and geometric calibration coefficients and georeferencing parameters (i.e. platform ephemeris) computed and appended, but not applied to Level 0 data.

data product levels

(continued)

• Level 1B--Radiometrically corrected and geolocated Level 1A data that have been processed to sensor units.

• Level 2--Derived geophysical parameters at the same resolution and location as the Level 1 data.

• Level 3--Geophysical parameters that have been spatially and/or temporally re-sampled (i.e., derived from Level 1 or Level 2 data).

• Level 4--Model output and/or results of lower level data that are not directly derived by the instruments.

Data Levels 1 through 4 as defined in the EOS Data Panel Report. Consistent with the Committee on Data Management and Computation and Earth Science and Applications Data System definitions.

data pyramid

A method for representing the multi-layered aspects of earth science and related data. The various levels of the pyramid are intended to correspond to various levels of abstraction, aggregation, or synthesis of data, and the narrowing towards the top is meant to reflect the generally decreasing amounts of data at each layer. Although the types of data at the various layers do not always adhere to these general rules, the pyramid has nevertheless proven to be an effective tool for presenting the multi-layers nature of earth science and related data.

data quality request

Data quality request is a request issued by the PGS to a scientist at a science computing facility to perform QA of a particular product before future processing or distribution. A time window is applied to the request in keeping with the production schedule.

data rate profile

Instrument's and subsystem's data rate requirements (e.g., recorder data rate) to be included in the instrument or subsystem resource profiles.

data set

A logically meaningful grouping or collection of similar or related data.

data set
documentation

Information describing the characteristics of a data set and its

component granules, including format, source instrumentation, calibration, processing, algorithms, etc.

data type taxonomy

A classification of earth science and related data into types.

delivered algorithm packages

The full content of data and information delivered by a data producer during the process of standard product Algorithm Integration & Test, including all elements defined as minimum content within Volume 4 of the Science User's Guide, available at PDR.

demonstration (demo)

Observation of the functional operation of the verification item in a controlled environment to yield qualitative results without the use of elaborate instrumentation, procedure, or special test equipment.

design interface

The interaction and relationship of logistics with the system engineering process to ensure that system element influences the definition and design of system elements so as to reduce life cycle costs.

desktop objects

A subclass of General Desktop Objects used in the design of the desktop for the SDPS client subsystem.   Distinguishing capabilities include: the ability to associate programs with each type and instance of the class, e.g., to display, manipulate, or edit the object; and the notion that the object may have complex structure, i.e., consists of parts which themselves may be document objects. Although derived from research work related to traditional documents, a desktop document object can be any kind of complex data object, for example, an hierarchical data format file.

detail schedules   Schedules used by the CAMs to manage their scope of work on the project. An example of a detail schedule is a schedule of all work packages within a cost account. This schedule may consist of a network, a collection of activities or a combination of both.

detailed activity schedules   The schedule for a spacecraft and instruments which covers up to a10 day period and is generated/updated daily based on the instrument activity listing for each of the instruments on the respective spacecraft. For a spacecraft and instrument schedule the spacecraft subsystem activity specifications needed for routine spacecraft maintenance and/or for supporting instruments activities are incorporated in the detailed activity schedule.

deviation   A written request to depart temporarily (for a specific period of time or number of units) from the authorized baseline requirements (i.e., a temporary or limited waiver).

direct broadcast   Continuous down-link transmission of selected real-time data over a broad area (non-specific users).

directives   Directives consist of information received by the PGS from the system management center that acts as a final authoritative directive for action. It may include general policies, official procedures, and resolutions of schedule conflicts that have not been resolved with the IMS.

directory   A collection of uniform descriptions that summarize the contents of a large number of data sets. It provides information suitable for making an initial determination of the existence and contents of each data set. Each directory entry contains brief data set information (e.g., type of data, data set name, time and location bounds).

discipline   A field of study (e.g. oceanography, meteorology, geology, land biology).

Distributed Active Archive Center (DAAC)	An EOSDIS facility which generates, archives, and distributes EOS Standard Products and related information for the duration of the EOS mission. An EOSDIS DAAC is managed by an institution such as a NASA field center or a university, per agreement with NASA. Each DAAC contains functional elements for processing data (the PGS), for archiving and disseminating data (the DADS), and for user services and information management (elements of the IMS).

ASF -- Alaska SAR Facility

EDC -- EROS Data Center

GSFC -- Goddard Space Flight Center

JPL -- Jet Propulsion Laboratory

LaRC -- Langley Research Center

MSFC -- Marshall Space Flight Center

NSIDC -- National Snow and Ice Data Center

DAAC Engineering Liaison	Systems Engineer responsible for bi-directional flow of information between the DAAC and ECS. Responsible engineer for ensuring DAAC lessons learned are properly incorporated in ECS design and development. Responsible engineer for ensuring the DAAC is current on ECS architecture.
DAAC Science Liaison	The ECS DAAC Scientists are located at the EOSDIS DAACs. They provide a working level interface between the ECS development and DAAC Science Advisory Groups, DAAC user communities, and DAAC scientific staffs. The objectives are to facilitate understanding, by the ECS developers, of the scientific data needs of the DAAC user communities and to foster DAAC and science community involvement in the ECS requirements definition and development process.

DAAC-unique   Functions and capabilities provided by the DAAC beyond those provided by the core system. The functions will be integrated with ECS via APIs for other similar mechanisms. Examples of DAAC-unique functions include visualization, specialized interfaces, and data set-unique functionality.

dynamic data sets   Dynamic data sets are those containing parameters whose values change routinely and predictably; i.e. at set intervals in time.

earned value   The sum of the values for accomplished work plus the appropriate portion of the values for level of effort and apportioned effort. On C/SCSC projects, this is the budgeted cost for work performed.

ECS contractor team   Hughes Applied Information System

> ARC (Applied Research Corporation)
>
> EDS (Electronic Data Systems Corporation)
>
> ESSi (Engineering & Science Services Inc.
>
> HTSC (Hughes Technical Services Corporation)
>
> Loral AeroSys
>
> NYMA Inc.

ECS evolutionary development   The process for delivering and evolving ECS functionality through the used of multiple development tracks and delivery mechanisms. Use of development tracks and delivery mechanisms are tailored to the goals of the particular portion of the system of the system, with an overall goal of providing relatively stable portions of the system in comparison to portions which are rapidly adapting to the system's environment.

ECS project — ECS provides single-point access for a worldwide science community, simultaneous mission management for multiple instruments, and regular production of validated science products using community-supplied algorithms.

ECS-supported — A hardware or software component that conforms to an Earth Science Data and Information System (ESDIS) approved set of standards and has been fully tested by the ECS contractor.

EOS Data and Operations System (EDOS) production data set — Data sets generated by EDOS using raw instrument or spacecraft packets with space-to-ground transmission artifacts removed, in time order, with duplicate data removed, and with quality/accounting (Q/A) metadata appended. Time span, number of packets, or number of orbits encompassed in a single data set are specified by the recipient of the data. These data sets are equivalent to Level 0 data formatted with Q/A metadata.

For EOS, the data sets are composed of: instrument science packets, instrument engineering packets, spacecraft housekeeping packets, or onboard ancillary packets with quality and accounting information from each individual packet and the data set itself and with essential formatting information for unambiguous identification and subsequent processing.

EDOS quick look production data sets — Data sets generated by EDOS using raw instrument or spacecraft packets from a single Tracking and Data Relay Satellite System (TDRSS) acquisition session and made available for delivery to a user within 1 hour of receipt of the last packet in the session. Transmission artifacts are removed, but time ordering and duplicate packet removal is limited to packets received during the TDRSS contact period.

element — The next lower functional subdivision below "segment" within the ECS functional hierarchy.

element test review (ETR) — Determines if development level testing (for each release) has successfully been completed.

emergency fix

A change installed and documented in controlled hardware or software with the responsible change control board's (or designated representative's) approval, but separate from a formally released change.

engineering data

All data available on-board about health, safety, environment, or status of the spacecraft and instruments.

• housekeeping data: The subset of engineering data required for mission and science operations. These include health and safety, ephemeris, and other required environmental parameters.

• instrument engineering data: All non-science data provided by the instrument.

• platform engineering data: The subset of engineering data from platform sensor measurements and on-board computations.

• spacecraft engineering data: The subset of engineering data from spacecraft sensor measurements and on-board computations.

ephemeris data

See "orbit data"

evaluation package

An evaluation package is a delivery mechanism for incrementally developed components and selected prototypes. The objectives of evaluation packages are to increase user involvement in system evolution and rapid evaluation and to facilitate rapid incorporation of user feedback into the incremental development process.

facility instrument

An instrument defined by NASA as having broad significance to the EOS Program and provided by a designated NASA center or foreign agency.

federated schema

A schema for distributed data repositories which is constructed from the schema for each repository in a simple manner (called federating), usually as a union.

formal development track	A development process distinguished by complete tree of requirements documentation, formal reviews at major milestones in the development cycle and a single waterfall of phases leading to a formal release. The single waterfall has a long time frame relative to the incremental development track and prototypes.
formal qualification testing	A process that allows the contracting agency to determine whether a configuration item complies with the allocated requirements for that item.
formal release	A formal release (Release) is a system-wide update to the ECS, delivered and tested as a part of the EOSDIS. ECS Releases will represent the ECS portion of EOSDIS Versions. Formal releases are part of the formal development track.
format	Format of data -- ASCII, binary, etc.
function	The action or actions which an item is designed to perform.
functional baseline	The initial baseline established at SRR and refined at SDR.
functional configuration audit (FCA)	The formal examination of functional characteristics of a CI, prior to acceptance, to verify that the item has achieved the performance specified in its functional or allocated configuration identification.
geographic location	The spatial area of coverage by a granule, usually specified as one of a fixed set of pre-determined regions, or "Global".
government furnished equipment (GFE)	GFE is equipment either furnished to a contractor, as in government-furnished equipment, or acquired by the contractor, as in contractor-acquired equipment.

government furnished information	Government furnished information are specific, non-tangible items of data supplied by the government to the contractor necessary to achieve contractor performance requirements. GFI items include a delivery time requirement. Examples of GFI include answers to questions, promulgation of policy, scientific datasets and science algorithms, and spacecraft data bases, etc.
government furnished property (GFP)	GFP is property in the possession of or directly acquired by the Government and subsequently made available to the contractor
granule	The smallest aggregation of data that is independently managed (i.e., described, inventoried, retrievable). Granules may be managed as logical granules and/or physical granules.
granule location	The name of the product where this granule is located.
ground truth	Geophysical parameter data, measured or collected by other means than by the instrument itself, used as correlative or calibration data for that instrument data. It includes data taken on the ground or in the atmosphere. Ground truth data are another measurement of the phenomenon of interest; they are not necessarily more "true" or more accurate than the instrument data.
guide	A detailed description of a number of data sets and related entities, containing information suitable for making a determination of the nature of each data set and its potential usefulness for a specific application.
hardware	That combination of subcontracted, COTS, and government furnished equipment (e.g., cables and computing machines) that are the platforms for software.

hardware configuration item (HWCI)	A configuration item comprised of hardware components.
housekeeping data	The subset of engineering data required for mission and science operations. These include health and safety, ephemeris, and other required environmental parameters.
immediate command	Command issued to an instrument or subsystem that is transmitted with minimum delay for immediate execution. Delay would be due only to non-availability of uplink and/or the actual time to transmit the command.
incremental design review	Review conducted to evaluate segment designs associated with a release.
incremental development track	A development process distinguished by multiple iterations of requirements, design, and implementation with frequent user evaluations via demonstrations. Documentation and reviews are streamlined. Documentation of non-mission critical is created after development has completed. Each increment is developed with the potential of being integrated into the formal track for a release. The incremental development track has a cycle time between the formal development and prototypes.
incremental scheduling	see "comprehensive and incremental scheduling.
independent verification and validation (IV&V)	Verification and validation performed by a contractor or government agency that is not responsible for developing the product or performing the activity being evaluated. IV&V is an activity that is conducted separately from the software development activities governed by the ECS contract.

in operations (or operational)	An ECS capability is in operations if some of the following are true:

• It is accessible by non-ECS personnel (no matter how restricted the group may be)

• Some or all of it resides outside of the ECS Development Facility

• It is used to support outside agencies/projects (including testing of interfaces with such)

Operations does not necessarily imply responsibility of the formal M&O organization. For example, the early EPs are operated by a combination of the ECS developers and the site liaisons. |
in-situ data	see "ground truth"
inspection	The visual, manual examination of the verification item and comparison to the applicable requirement or other compliance documentation, such as engineering drawings.
institutional facilities or institutional elements	Facilities established by an institution that take on some responsibility in support of EOSDIS, or elements of the EOSDIS that function as part of an institution, and represent both EOSDIS and the programs, goals and purpose of the institution.
instrument	• A hardware system that collects scientific or operational data.

• Hardware-integrated collection of one or more sensors contributing data of one type to an investigation.

• An integrated collection of hardware containing one or more sensors and associated controls designed to produce data on/in an observational environment. |

| instrument data | Data specifically associated with the instrument, either because they were generated by the instrument or included in data packets identified with that instrument. These data consist of instrument science and engineering data, and possible ancillary data. |

| instrument activity deviation list | An instrument's activity deviations from an existing instrument activity list, used by the EOC for developing the detailed activity schedule. |

| instrument activity list | An instrument's list of activities that nominally covers seven days, used by the EOC for developing the detailed activity schedule. |

| instrument engineering data | All non-science data provided by the instrument. |

| instrument microprocessor memory loads | Storage of data into the contents of the memory of an instrument's microprocessor, if applicable. These loads could include microprocessor-stored tables, microprocessor-stored commands, or updates to microprocessor software. |

| instrument resource deviation list | An instrument's anticipated resource deviations from an existing resource profile, used by the EOC for establishing TDRSS contact times and building the preliminary resource schedule. |

| instrument resource profile | Anticipated resource needs for an instrument over a target week, used by the EOC for establishing TDRSS contact times and building the preliminary resource schedule. |

| instrument science data | Data produced by the science sensor(s) of an instrument, usually constituting the mission of that instrument. |

integrated logistics support (ILS)	The disciplined, unified, and iterative approach to management, engineering and technical activities necessary to plan and direct support considerations into every aspect of system development and operation. Regardless of organizational assignment or functional allocation, the discipline of ILS is the integration of multiple technical disciplines that address the support aspects of a system. The integration of all system elements is necessary to provide support at minimum life cycle costs.
integrated schema	A schema for distributed data repositories which presents the data of these repositories as a single, integrated database. The schema may define new concepts, such as new, 'virtual data products' which are derived from the underlying data in the repositories in a possibly complex fashion. A mapping between the integrated schema and those of the individual repositories describes the derivations. The mapping can be quite complex - whereas a federated schema has a very simple mapping, e.g., 1-to-1.
integration	The orderly progression of combining lower level software and/or hardware items to form higher level items with broader capability.
interdisciplinary investigator computing facilities (IICF)	Project-provided facilities at interdisciplinary investigator locations used to pursue EOS-approved investigations and produce higher-level data sets.
interface(s)	The functional and physical characteristics required to exist at a common boundary.
interface classes	The interfaces offered by a class of objects or object collections. User, for example, in the context of Service Classes to denote the collection of interfaces supported by this service class.
interface definition language (IDL)	IDL provides uniform semantics for all interfaces.

interface milestones   These milestones that represent the delivery of hardware, software or documents between organizational elements within the ECS project. The "hard" interface milestones, defined as hardware or software movement between organizations will always be included and will also generally include the significant "soft" interfaces between organizations, defined as the "paper" interfaces.

interim release   The delivery of system capability resulting from early efforts on the formal track development to the customer for testing of EOS functionality prior to an operational version.

intermediate schedules   Summary level bar chart schedules that show major activity spans, events, and interdependency milestones at the release, subsystem, or major organizational levels.

interoperability   Refers to the capability of the user interface software of one data set directory or catalog to interact with the user interface at another data set directory or catalog. Three levels of Catalog Interoperability are recognized:

- Level 1 - Simple network interconnectivity among systems.
- Level 2 - Catalog systems can exchange limited search and

  user information.
- Level 3 - Catalog systems exchange standard search protocols.

This provides "virtual" similarity between different systems.

inventory	A uniform set of descriptions of granules from one or more data sets with information required to select and obtain a subset of those granules. Granule descriptions typically include temporal and spatial coverage, status indicators, and physical storage information. An inventory may describe physical granules, logical granules, or both, including a mapping between them if they are not identical.

Note that the inventory is not the granules themselves, but rather the descriptive data for each of them, specifically used by both system and user to locate those desired.

inventory characterization	Enhanced content-based metadata describing granules or aggregations of granules (phenomenology data bases, super-granules, feature tags, etc.)

investigator see also "scientist"	An individual who is contracted to conduct a specific scientific investigation. (An instrument PI is the person designated by the EOS program as ultimately responsible for the delivery and performance of standard data products derived from an EOS instrument investigation.)

investigator working group (IWG)	A group made up of the principal investigators and research instrument team leaders associated with the instruments on a single spacecraft. The IWG defines the specific observing programs and data collection priorities for a single spacecraft based on the guidelines from the IWG.

"Levels" pertaining to data	see "raw data"

"Levels" pertaining to engineering drawings	Engineering drawings and associated lists that disclose a design approach suitable to support the manufacture of a production prototype and limited production models.
Level 2 (production prototype and limited production)	Engineering drawings and associated lists that provide engineering definition sufficiently complete to enable a competent manufacturer to produce and maintain quality control of item(s) to the degree that physical and performance characteristics interchangeable with those of the original design are obtainable without resorting to additional product design effort, additional design data or recourse to the original design activity.
Level 3 (production)	
level of effort (LOE)	Effort that cannot be associated with a definable end product or result. LOE is planned and earned on the basis of the passage of time rather than accomplishment of specific events.
logistic support	The composite of all considerations necessary to assure the effective and economical support of a system throughout its projected life cycle.
logistics	The science of management, engineering and technical activities concerned with requirements, design and supplying and maintaining resources to support objectives, plans and operations.
logistics support analysis (LSA)	The selective application of systematic and comprehensive analyses, performed during the conceptual, design, development and operational phases as part of the system engineering and design process, to assist in complying with supportability and other ILS objectives.
long-term instrument plan (LTIP)	The plan generated by the instrument representative to the spacecraft's IWG with instrument-specific information to complement the LTSP. It is generated or updated approximately every six months and covers a period of up to approximately 5 years.

long-term science plan (LTSP)	The plan generated by the spacecraft's IWG containing guidelines, policy, and priorities for its spacecraft and instruments. The LTSP is generated or updated approximately every six months and covers a period of up to approximately five years.
long term spacecraft operations plan	Outlines anticipated spacecraft subsystem operations and maintenance, along with forecasted orbit maneuvers from the Flight Dynamics Facility, spanning a period of several months.
maintainability	The measure of the ability of an item to be retained in or restored to a specified condition when maintenance is performed by personnel having specified skill levels, using prescribed procedures and resources, at each prescribed level of maintenance and repair. (The probability that maintenance, both corrective and preventive, can be performed in a specified amount of time using a specified set of prescribed procedures and resources expressed as MTTR). Maintainability is the function of design.
maintenance	The process of planning and executing life cycle maintenance concepts and requirements necessary to ensure sustained operation of system elements.
maintenance downtime	The total elapsed time required to repair and restore a system to a full operational status and/or retain a system in that condition.
mean time between failure (MTBF)	The reliability result of the reciprocal of a failure rate that predicts the average number of hours that an item, assembly or piece part will operate within specific design parameters. (MTBF=1/(l) failure rate; (l) failure rate = # of failures/operating time.

mean time between maintenance (MTBM)	The average time between all maintenance including both corrective and preventive maintenance.
mean time to repair (MTTR)	The mean time required to perform corrective maintenance to restore a system/equipment to operate within design parameters.
metadata	Information about data sets which is provided to the ECS by the data supplier or the generating algorithm and which provides a description of the content, format, and utility of the data set. Metadata may be used to select data for a particular scientific investigation.
milestone	A specific, definable achievement or an event.
milestone table	Table containing all Contractual Milestones, Control Milestones and Interface Milestones.
modelling	An investigative technique that uses a mathematical or physical representation of a system or theory that accounts for all or some of its known properties. Models are often used to test the effects of changes of system components on the overall performance of the system.
network	A flow diagram depicting the time phased sequence and interrelationship of events and activities that must be accomplished to achieve project objectives.
nonconformance	The failure of a unit or product to conform to specified requirements.

object | Identifiable encapsulated entities providing one or more services that clients can request. Objects are created and destroyed as a result of object requests. Objects are identified by client via unique reference.

object implementation | Code and data that realizes target object's behavior.

object request broker (ORB) | The ORB locates object implementation, ensures implementation is ready, and transmits data and returns results.

off-line | Access to information by mail, telephone, facsimile, or other non- direct interface.

office manager | The person responsible for managing the cost, schedule, and technical elements of a major office's responsibilities on a project.

on-line | Access to information by direct interface to an information data base via electronic networking.

on-site SDL | see software development library

on time QA | On time QA is a response to a data quality request that is received within the established production time window. It is received from a scientist at a science computing facility. It consists of data which will be used to complete the QA fields of the metadata. Overdue QA responses are sent directly to the DADS.

operational data | Data created by an operational instrument (i.e., NOAA AMRIR).

orbit data

Data that represent spacecraft locations. Orbit (or ephemeris) data include: Geodetic latitude, longitude and height above an adopted reference ellipsoid (or distance from the center of mass of the Earth); a corresponding statement about the accuracy of the position and the corresponding time of the position (including the time system); some accuracy requirements may be hundreds of meters while other may be a few centimeters.

organizational breakdown

A functionally oriented pyramid-like structure indicating structure organizational relationships and used as the framework for the assignment of responsibility.

p = v metadata

Label = value' where label is a field name and value is either a single value or list of values

packaging, handling, storage and transportation (PHS&T)

The resources, processes, procedures, design considerations and methods to ensure that all system, equipment and support items are preserved, packaged, handled and transported properly including environmental considerations and equipment preservation requirements for short and long term storage and transportability.

parameter

The output generated by applying predetermined transformation algorithms to previously existing products and ancillary data, using specified calibration coefficients, to represent a specific geophysical parameter. Included are Level 2-4 products.

parametric analysis

A parametric analysis is used to obtain a close approximation of a units inherent reliability when creditable data is not available.. Parametric analysis compares a unit with known values and is similar to and used in a similar application as the unit in question. Parametric analysis uses the known units' R&M data as representative of the vendor's unit. This will often provide the best available estimate of the inherent reliability of a proposed COTS item.

pathfinder	A long-term, global Earth science data set produced from non-EOS data using community consensus algorithms as part of the EOSDIS program. Selection of pathfinder data sets is made by the EOS program office (in consultation with the IWG and the science community).
payload	Complement of instruments for a mission on a spacecraft or spacecraft.
performance measurement	Time phased budget plan against which contract baseline performance is measured. It is comprised of time phased cost account budgets, undistributed budgets, and indirect budgets. Management reserve is not a part of the performance measurement baseline.
physical configuration audit	The formal examination of the "as-built" configuration of a configuration item against its technical documentation to establish the CI's initial product configuration identification.
planning package	A future segment of work within a cost account that is not yet broken down into work packages. A planning package has a firm budget, estimated start and complete dates, and description of work.
platform	The EOS spacecraft and its subsystems without the instruments.
platform engineering data	The subset of engineering data from platform sensor measurements and on-board computations.
playback data	Data that have been stored on-board the spacecraft for delayed transmission to the ground.

Preliminary Design Review (PDR)	PDR is held for each ECS Segment. The PDR addresses the design of the segment-level capabilities and element interfaces through all ECS releases. The PDR also addresses prototyping results and how the results of both Contractor and Government prototyping efforts, studies, and user experience with EOSDIS Version 0 have been incorporated into the ECS design for each respective Segment.
preliminary resource schedule	An initial integrated spacecraft schedule, derived from instrument and subsystem resource needs, that includes the network control center TDRSS contact times and nominally spans seven days.
preplanned command group	see "command group"
preplanned stored command	A command issued to an instrument or subsystem to be executed at some later time. These commands will be collected and forwarded during an available uplink prior to execution.
preventive maintenance	All actions that are performed on a scheduled basis in an attempt to retain the operation of a system/equipment within specified operating parameters. Preventive maintenance includes but is not limited to: Inspection, cleaning, filter changes, lubrication, calibration and alignment.
principal investigator (PI)	An individual who is contracted to conduct a specific scientific investigation. (An instrument PI is the person designated by the EOS Program as ultimately responsible for the delivery and performance of standard products derived from an EOS instrument investigation.).

principal investigator computing facility (PICF)	Project-provided facilities at PI locations used to develop and maintain algorithms, produce data sets, and validate data.
principal investigator instrument	An instrument selected pursuant to the EOS announcement of opportunity and provided by a PI and his home institution.
process	A logical sequence of tasks by which a job is accomplished.
product baseline	The baseline which establishes the "as-built" configuration for system-level integration and testing and independent acceptance testing. This baseline is validated by functional and physical configuration audits, and reviewed and approved by GSFC as part of RRR.
product coordination	Product coordination is the coordination of the receipt, staging, and storage of data necessary to carry out the PGS processing schedule.
product generation executive (PGE)	PGE is a set of one or more compiled binary executables and/or command language scripts; it is the smallest schedulable unit for product generation system (PGS) processing.
product generation executable	Product generation executable is an obsolete term. See product generation executive.
product order	Product order is either a request for the generation of a specific product with an associated time window, a priority processing request, a reprocessing request, or a standing order for a product to be generated on a regular basis with a rough timeline, or changes to standing orders. Product orders are received by the PGS from the IMS.

product status dialog	Product status dialog consists of information to assist the IMS in tracking the status of a product order. The IMS may send to the PGS a request for the status of a product to which the PGS would respond with the current product status. The PGS will send a schedule conflict notice to the IMS if a product request will cause a schedule conflict and the IMS may respond with an adjustment to the time window. Schedule conflicts not resolved at this level are resolved by the system management center. The PGS will send an overdue alert to the IMS if it is clear that a product order will not be met on time.
Program Management Review (PMR)	Formal start of ECS design activities. The PMR is held to ensure a common understanding of how the ECS development effort will be managed.
project intermediate schedule	A summarization of selected activities in the detail schedules. This schedule will be the primary schedule used by the Office Managers to manage the scope of work assigned to them.
project network	Network of project activities. The project network assures horizontal traceability at the project level.
Project Status Review (PSR)	An extension to the PMR, this review provides the mechanism to manage the program resources associated with all other ECS reviews. This review is the forum for timely risk management and possible adjustments to the schedule.
prototype	Prototypes are focused developments of some aspect of the system which may advance evolutionary change. Prototypes may be developed without anticipation of the resulting software being directly included in a formal release. Prototypes are developed on a faster time scale than the incremental and formal development track.

prototype product	Data product generated as part of a research investigation, of wide research utility, requiring too much data or computer power for generation at the investigator science computing facility, and accepted as a candidate standard product by the IWG. Prototype products will be generated at DAACs, but their routine generation is not guaranteed and will not interfere with other standard product generation.
prototyping	The construction of a solution of a design or implementation problem, the feasibility of which needs to be determined as early as possible in order to arrive at a critical decision.
Prototyping Results Review (PRR)	PRRs are held to publicize results of specific prototyping activities. The PRRs are timed to mesh with the points in the development cycle where information regarding the prototype (or prototypes) will be needed. A PRR is used to reach conclusions concerning incorporation of the prototype into the mainline system development.
quality assurance	A subset of the total performance assurance activities generally focused on conformance to standards and plans.
quick-look data	Data received during one TDRSS contact period which have been processed to Level 0 (to the extent possible for data from a single contact). These are data that have been identified to EDOS as requiring priority processing
quick-look product	Product produced at a PGS by applying science algorithms to quick-look data.

raw data   Data in their original packets, as received from the spacecraft and
                            instruments, unprocessed by EDOS.

                            • Level 0 – Raw instrument data at original resolution, time
                            ordered, with duplicate packets removed.

                            • Level 1A – Level 0 data, which may have been reformatted or
                            transformed reversibly, located to a coordinate system, and
                            packaged with needed ancillary and engineering data.

                            • Level 1B – Radiometrically corrected and calibrated data in
                            physical units at full instrument resolution as acquired.

                            • Level 2 – Retrieved environmental variables (e.g., ocean wave
                            height, soil moisture, ice concentration) at the same location and
                            similar resolution as the Level 1 source data.

                            • Level 3 – Data or retrieved environmental variables that have
                            been spatially and/or temporally resampled (i.e., derived from
                            Level 1 or Level 2 data products). Such resampling may include
                            averaging and compositing.

                            • Level 4 – Model output and/or variables derived from lower
                            level data which are not directly measured by the instruments.
                            For example, new variables based upon a time series of Level 2
                            or Level 3 data.

real-time command   see "command group"
group

real-time data   Data that are acquired and transmitted immediately to the ground
                            (as opposed to playback data). Delay is limited to the actual time
                            required to transmit the data.

reconfiguration   A change in operational hardware, software, data bases or
                            procedures brought about by a change in a system's objectives.

Release Initiation Review (RIR)	An internal review conducted at the start of the development phase of a release to revisit the requirements and issues associated with that particular release.
Release Readiness Review (RRR)	Conducted at the ECS system level for a GSFC project review team upon completion of release acceptance testing. The Independent Acceptance Test Organization leads the RRR to determine, with the Government Acceptance Test Team and the Contracting Officer's Technical Representative, if the release is ready to be delivered, installed, and incorporated into the operational system.
reliability	Reliability is the function of design. It is the probability that system/equipment will operate within design parameters under stated conditions, for a specified interval expressed as MTBF.
regression testing	Re-test to insure the continued correct functioning usually after the replacement or addition of functionality.
requests	Mechanism through which clients acquire other object services.
requirement	A statement to which the developed system must comply. Varieties of requirements: Levels 2, 3, 4; performance, functional, design, interface.
reusable software	Software developed in response to the requirements for one application that can be used, in whole or in part, to satisfy the requirements of another application.
risk	An event, action, or thing with a: 1) potential loss associated with it, 2) uncertainty or chance involved, 3) some choice involved.

risk management	The process of identifying, measuring, and controlling risk factors associated with a program development and/or support activity.
SCC-stored commands and tables	Commands and tables which are stored in the memory of the central onboard computer on the spacecraft. The execution of these commands or the result of loading these operational tables occurs sometime following their storage. The term "core-stored" applies only to the location where the items are stored on the spacecraft and instruments; core-stored commands or tables could be associated with the spacecraft or any of the instruments.
scenario	A description of the operation of the system in user's terminology including a description of the output response for a given set of input stimuli. Scenarios are used to define operations concepts.
schedules	Schedules represent the current sequence of tasks to be executed along with approximate execution times as generated by the PGS scheduler. Copies of these schedules, which are updated frequently, are made available to the IMS, the system management center, and the DADS.
schedule variance	The arithmetic difference between earned value and planned value; represents schedule status in terms of dollars.
science computing facility	A facility supplied by the EOS program to an EOS team leader, team member, or principal investigator (instrument or interdisciplinary) for the following purposes: developing and maintaining the algorithms and software used to generate standard data products; quality control of standard data products; in-flight instrument calibration and data set validation; scientific analysis, modeling, and research' generation of special data products; and use as an interface to the investigator's institutional facility.

science processing library (SPL)	The SPL is a repository of software, contributed by scientists and other users, to which ECS will provide access in order to facilitate the reuse of software throughout the community. This software is made available as it was contributed with ECS performing only a cataloging function to identify for users what is available. ECS is not responsible for the validity or maintenance of the software contained in the science processing library.
scientist see also "investigator"	A scientist is an individual having interest in the direct usage or support of the data which is collected and generated by, or the instruments which are contained within the EOSDIS. Included are principal investigators, co-investigators, research facility team leaders and team members, interdisciplinary investigators, instrument investigators, non-EOS affiliated science users, and other users of a diverse nature.
SDP Toolkit	A set of SDPS-standard API between science algorithms and the process execution service for status reporting and process control
segment	One of the three functional subdivisions of the ECS: CSMS -- Communications and Systems Management Segment FOS -- Flight Operations Segment SDPS -- Science Data Processing Segment
segment operational readiness review (SORR)	SORRs shall be conducted to review the readiness of site operations to receive ECS software for a release. SORR may be held coincident with CSR. Responsibility for review is site management. The review shall focus on functional capabilities, performance and operational characteristics of each segment. The SORR shall concentrate on operational procedures, human interfaces and operational readiness.

sensor

A device which transmits an output signal in response to a physical input stimulus (such as radiance, sound, etc.). Science and engineering sensors are distinguished according to the stimuli to which they respond.

• Sensor name: The name of the satellite sensor which was used to obtain that data.

service

A grouping of functional requirements as listed in a specification. For example, in the Level 3 requirements, IMS "services" are System Access, Information Search, etc.

simulated data

simulated data - same as test data

software

A combination of associated computer instructions and computer data definitions required to enable the computer hardware to perform computational, data manipulation, and control functions (to include parameters and procedures associated with software products).

software
development file

A repository for a collection of material pertinent to the development or support of software. Contents typically include (either direct or by reference) design considerations and constraints, design documentation and data, schedule and status information, test requirements, test cases, test procedures, and test results.

software development library (SDL)	A generic term which describes a controlled collection of software, documentation, and associated tools and procedures used to simplify the development and subsequent support of software. An SDL provides storage of and controlled access to software in both human readable and machine readable form. Also, it may contain management data pertinent to the software development project.
on-site SDL	Both common and site specific software released for operational use are maintained in the on-site software development library located at each site. The on-site SDL also contains the master index of configuration items (hardware, COTS, documentation) developed by ECS and residing at that specific site.
spacecraft engineering data	The subset of engineering data from spacecraft sensor measurements and on-board computations.
spacecraft subsystems activity list	A spacecraft subsystem's list of activities that nominally covers seven days, used by the EOC for developing the detailed activity schedule.
spacecraft subsystems resource profile	Anticipated resource needs for a spacecraft subsystem over a target week, used by the EOC for establishing TDRSS contact times and building the preliminary resource schedule.
special data products	Data products which are considered part of a research investigation and are produced for a limited region or time period, or data products which are not accepted as standard products.

specification
A document intended primarily for describing the essential technical requirements for items, material or services, including the procedures for determining whether or not the requirements have been met.

standard data products
a.   Data products generated as part of a research investigation, of wide research utility, accepted by the IWG and the EOS Program Office, routinely produced, and in general spatially and/or temporally extensive. Standard Level 1 products will be generated for all EOS instruments; standard Level 2 products will be generated for most EOS instruments.

b.   All data products which have been accepted for production at a PGS, including (1) above as well as prototype products.

statement of work
A description of the end objectives, scope, and constraints of a unique and separately identifiable portion of the work required to satisfy contract requirements.

static data sets
Static data sets are those containing parameters whose values may change, but not routinely at set intervals in time.

status
Status is information regarding schedules, hardware and software configuration, exception conditions, or processing performance. This information is exchanged with the DADS, and is provided to the system management center (SSMC). The SSMC may also receive information regarding schedule conflicts that have not been resolved with the IMS.

sub sampling
Standard sub sampling involves extraction of a multi-dimensional rectangular array of pixels from a single data granule, where regularly-spaced, non-consecutive pixels are extracted from each array dimension. For each dimension, the size of the pixel array is characterized by the starting pixel location, the number of pixels to extract, and the pixel-spacing between extracted pixels.

subscription

Permit users to users register their interest in changes to (and other events associated with) data and services using a common SDPS service function called the Subscription Service. ECS services will describe in their advertisement, whether they support subscriptions.

subletting

Standard subletting involves extraction of a multi-dimensional rectangular array of pixels from a single data granule, where consecutive pixels are extracted from each array dimension. For each dimension, the size of the pixel array is characterized by the starting pixel location and the number of pixels to extract.

subsystem

A combination of sets, groups, etc., which performs an operational function within a system and is a major division of a system.

summary statistics

The set of statistical representations of individual data products, summarizing values over a set of granule instances of the product, such as in/ax values, means, standard deviations.

supply support

All management actions, procedures and techniques required to determine requirements for, acquire, catalog, receive, store, transfer, issue and dispose of secondary items. This includes provisioning for initial support as well as replenishment supply support.

support equipment

All equipment required to support the operation and maintenance of a material system. This includes associated multi-use end items, ground handling and maintenance equipment, tools, calibration equipment, communications resources, test equipment and automatic test equipment with diagnostics software for both on-and-off equipment maintenance. It also includes the acquisition of logistics support for the support and test equipment itself.

supportability
The ability of design characteristics and logistic resources to sustain system elements in a ready and usable status.

system
A composite of equipment, skills, and techniques capable of performing or supporting an operational role (or both). A complete system includes all equipment, related facilities, material, software, services and personnel required for its operation and support to the degree that it can be considered a self-sufficient item in its intended operational environment.

System Design Review (SDR)
The SDR addresses the top-level ECS design. The SDR includes the definition and high-level design of ECS segments and elements, the interfaces between these and the interfaces between these and external systems, facilities, users, operators, etc.

system facilities
All system real property assets required to develop and operate system elements.

system hierarchy
A set of terms used to decompose the system into smaller "building blocks." The ECS statement of work identifies system, segments, elements, and subsystems. This SDP further decomposes subsystems into HWCIs, CSCIs, CSCs, and CSUs.

System Requirements Review (SRR)
The SRR encompasses a complete review of the ECS specification and the EOS/EOSDIS Requirements (Level 2) that drive the specification, it promotes a common understanding between the Project and the Contractor of the capabilities that ECS must provide.

target of opportunity (TOO)
A TOO is a science event or phenomenon that cannot be fully predicted in advance, thus requiring timely system response or high-priority processing.

team member computing facility (TM CF)	Project-provided facilities at research instrument team member locations used to develop and test algorithms and assess data quality.
technical data	All recorded, engineering and technical information defining form, fit, function and integrated logistics support for the system.
temporary file	Temporary file is a file which may exists for the duration of a single PGE, or may exist for some indeterminate time beyond the termination of the PGE which created it.
test	A procedure or action taken to determine under real or simulated conditions the capabilities, limitations, characteristics, effectiveness, reliability or suitability of a material, device, system or method.
testing	An element of inspection and generally denotes the determination by technical means of the properties or elements of supplies, or components thereof, including functional operation, and involves the application of scientific principles and procedures.
test data	Test data is any data set designed or specially selected to aid in the algorithm integration and test process, to help test the operation of algorithms under development by simulating realistic input.
test products	Test products are science products generated by new or updated algorithms during the integration and test period. Test products are delivered to scientists at a science computing facility.
Test Readiness Review (RR)	Conducted by the project for each release at the segment and element levels to review the plans for the integration and verification of the subsystems with the elements and the elements with their segments.

thread	A set of components (software, hardware, and data) and operational procedures that implement a function or set of functions.
thread, *as used in some Systems Engineering documents*	A set of components (software, hardware, and data) and operational procedures that implement a scenario, portion of a scenario, or multiple scenarios.
toolkits	Some user toolkits developed by the ECS contractor will be packaged and delivered on a schedule independent of ECS releases to facilitate science data processing software development and other development activities occurring in parallel with the ECS.
training	The processes, procedures, devices and equipment required to train personnel to operate and support system elements.
transportation	All necessary actions, resources and methods necessary to ensure the proper and safe movement of system elements and material. Included are the packaging, handling, and storage of items.
unit	An assembly of any combination of parts, subassemblies and assemblies mounted together which are normally capable of independent operation in a variety of situations.
universal reference	A uniform model for referencing objects throughout SDPS which each SDPS service will understand and support.

user   Any person accessing the EOSDIS.

• Authorized users are users who have viable EOSDIS accounts, and who may therefore make EOSDIS data requests. These users may be affiliated or unaffiliated. Affiliated users are those who are sponsored by one of the parties to the Earth Observations-International Coordination Working Group (EAU-ICWG) data policy. Each party is responsible for ensuring that all its affiliated users comply with the EO-ICWG data policy. Use of data by affiliated users is classified in one of three categories, defined in the EO-ICWG data policy:

+ Research Use: A study or an investigation in which the user affirms (1) the aim is to establish facts or principles; (2) the data will not be sold or reproduced or provided to anyone not covered by this or another valid affirmation; (3) the results of the research will be submitted for publication in the scientific literature; and (4) detailed results of the research will be provided to the sponsoring spacecraft operator as agreed between the researcher and the sponsoring spacecraft operator. In the context of EOSDIS , this means that NASA-affiliated users must make available to the research community their detailed results, including data, algorithms, and models at the time their research is accepted for publication, and that the data may be copied and shared among other researchers provided that either they are covered by a research agreement or the researcher who obtained the data from EOSDIS is willing to take responsibility for their compliance with the agreement. Data for affiliated users and for research and applications use will be made available at no more than the marginal cost of production and distribution.

+ Environmental Monitoring and Operational Use: Includes data use by those government agencies affiliated with the parties which conduct environmental monitoring and/or operational observations for the public good, and can include larger agencies to which the parties belong (i.e., the World Meteorological Organization); or national agencies, or their designates, involved in other operational forecasting activities which are conducted for the public good (i.e., weather, sea state, sea ice, agriculture, hydrology, etc.). Environmental Monitoring and Operational Use of Data constitutes any use of data to carry out a mandate of environmental observation and prediction as part of an agency's responsibilities to provide for the general welfare. Such use may include the routine downlink or direct broadcast of enhanced and

user	unenhanced data in near-real time within the operational community. Data for Environmental Monitoring and Operational use shall be provided in real or near-real time without fee, and shall be available through international EOS archives for non-real time users for no more than the marginal cost of reproduction and distribution consistent with the access terms for each instrument category.
(continued)	

+ Other users: Those persons requesting data for scientific, operational, applications, or commercial use, who are not directly represented by an EO-ICWG member, and who agree to the stipulations on data access and use as set by the EO-ICWG and the EOS program.

UserDIS	An expanded version of Global Change Data and Information System (GCDIS) open to general earth science data providers and users

validation	The process of evaluating a system or component during or at the end of the development process to determine whether it satisfies specified requirements.

variance analysis	Identification of variation from a planned baseline and analysis to determine its scope, cause, impact, and corrective action.

Vdata	A framework for storing customized tables in hierarchical data format files. Vdata is accessed via a Vdata interface and can be organized into Vdata classes.

verification	The process of evaluating the products of a given development activity to determine correctness and consistency with respect to the products and standards provided as input to that activity.

version	Versions are the culmination of a series of ECS releases, in conjunction with incorporation of science computing facility-developed science data processing software and unique site capabilities.
Vgroup	An aggregate of Vdata classes.
waiver, *configuration management specific*	A written authorization to accept a configuration item that departs from specific requirements but considered suitable for use "as is" or after rework by an approved method.
waiver, engineering	A written authorization to accept an item, which during manufacture or after having been submitted for inspection, is found to depart from specified requirements, but nevertheless is considered suitable for use "as is" or after repair by an approved method.
work authorization	The document that assigns responsibility and authority for a and Delegation defined task within a specified schedule, budget, and statement of work.

work breakdown structure   A product/service oriented logical subdivision of hardware, software, services, and other related tasks that shows how work is planned, performed, and managed.

work packages   A natural subdivision of activities within a cost account work to identify work to be performed.

END